number of rarities, amongst which may be mentioned a perfect specimen of the great auk, *Alca impennis*, in excellent plumage and preservation, *Didunculus strigirostris*, and a fine series of Birds of Paradise, including *Semiopteryx*.

Amongst the reptiles are large specimens of *Alligator nigra*, and a large number of *Chelonia*, and amongst the fish a fine series of *Selachians*. There is also a collection of the skeletons of vertebrata, and a large number of Invertebrata, corals, sponges, starfish, &c.; but this part of the collection is not yet arranged in the new building. The natural history department is under the direction of Prof. Barboyo du Bocage, who, it will be remembered, first described the siliceous sponge, *Hyalonema*, from Setubal Bay and on the Portuguese coast.

About a mile and a half or two miles from the heart of the city of Lisbon on high ground is the Botanical garden. The garden consists of two terraces, one above the other. The lower terrace contains nothing remarkable except a group of date palms, *Phœnix dactylifera*, one of which is about 45 ft. high, which are now in various stages of flower and fruit. On the upper terrace are two glass houses, but in bad repair and apparently not containing anything remarkable. But growing in the open air is a splendid specimen of the dragon tree, *Dracœna draco*, with a perfectly circular head of foliage, which must be 36 yards at least in circumference, whilst the stem is about 16 feet in circumference. The tree was covered with the dried remains of its fruit. *Aloe arborescens* is plentiful in the garden and indeed all over Lisbon, and is now in flower. Also growing in the open air are *Musa paradisiaia*, *Ficus elastica*, *Euphorbia veriifolia*. There is a nice series of plants classified according to their natural orders, the aloes and cactuses being well represented; but the whole garden has been allowed to fall into neglect, and presents a dreary appearance, being overrun by weeds, and most of the beds are nearly choked. It is intended to abandon the garden as a botanical one, and remove as many plants as possible to the garden attached to the new Polytechnic school, but it is to be hoped that the *Dracæna* will not be neglected. The flora generally which one meets with in Lisbon is most remarkable; Australian and Brazilian acacias abound in all the gardens, and thrive and become large trees. There is quite a rage for Eucalypti, which are said to grow as much as 14 feet in height here in a single year. They are to be seen everywhere, and some species are at present in blossom. At Embia, in the neighbourhood, tree ferns grow in the open air, and in the grounds of the King's palace besides *Chamærops* and *Phœnix dactylifera*, which are common in gardens about the town, *Jubœa spectabilis* and the Seychelle double cocoa-nut palm, *Lodoicea*.

H. N. MOSELEY

NOTES

MR. COLE, we regret very much to say, after fifty years public service, has announced his intention of resigning his post in connection with the Science and Art Department. It would be difficult indeed to estimate the extent and value of the services performed by Mr. Cole in behalf of science, services which have hitherto been most inadequately recognised, though we are certain this will not now be long the case. He has done more than any other man in the kingdom to establish schools of science throughout the country and to foster scientific instruction in every way, and that, too, in the face of opposition from quarters from which it would have been little expected.

PROF. SYLVESTER, late of the Royal Military Academy, Woolwich, has been elected a corresponding member of the Imperial Academy of Sciences of St. Petersburg.

WE have with great pleasure recorded from time to time the encouragement given to the study of Natural Science in our Universities and public schools, and are glad in reporting progress to notice that the governors of the Giggleswick Grammar School are carrying out the spirit of recent legislation in providing for the wider education which the age has called for. Giggleswick is an ancient village close to which, on the opposite side of the river Ribble, the more modern town of Settle has sprung up. Situated at the foot of the mountainous moorlands of north-west Yorkshire, where the Ribble quits its rocky gorges to wander over a wide rich valley, where peaty flats represent ancient lakes, this has long been known as a most interesting spot by the naturalist and antiquary. It was fortunate therefore for the cause of Natural Science, that the existence of an old well-endowed institution induced the Commissioners to fix upon Giggleswick as the chief school of a large district in the north of England, embracing some of the most important towns in Yorkshire. It so happens that in the immediate neighbourhood there are several very interesting caves, the exploration of which is being carried on by a Committee, amongst whom are many of our leading men of Science. The Committee have handed over the whole of the valuable remains obtained from the caves to the governors of the school, on the understanding that they will provide for their safe keeping and exhibition to the public. The Council of the Leeds Philosophical Society have followed up this by promising a very large series of duplicates from their museum, and the able curator of the Leeds Museum has undertaken to assist in the arrangement and classification of the collection. It is the duty of all scientific men to watch and encourage all *bonâ fide* efforts to give a prominent place to the teaching of Natural Science in our schools, especially where, as in this case, it is combined with a movement to form a scientific centre where illustrative specimens may be examined; and it is to be hoped that by-and-by all the standard works on scientific subjects may be consulted by a wide circle outside the school. The names of Sir James Shuttleworth, one of the governors of the school, and of Sir Charles Lyell among the supporters of the movement, offer a sufficient guarantee as to its character.

THE following extracts from a letter of Mr. Alexander Agassiz will be read with interest. It will be seen from them that the great fire at Boston did not spare the labours of scientific workers. The passage which refers to the health of his father, Prof. L. Agassiz, will give especial satisfaction to every naturalist on this side of the Atlantic:—"I am just in the middle of my Echini. I have had a very narrow escape with my book. The great fire, which has destroyed half Boston, came near to putting a stopper on my work. The plates of nearly one-third of the whole edition have not been printed, as the stones were lost in the fire. Fortunately I had about three hundred copies of the plates of parts I. and II. at the Museum out of the way, so must manage as best I can with that number. I lost, in addition, the stones of six plates of anatomy, with all the original drawings, which had been sent to the lithographer for lettering the plates. This is more serious, as it represents over a year's hard work, and the bulk of the notes being on the back of the drawings, it will delay the publication of my book for a good while. Parts I. and II. are at last out. My father has returned from his long trip a much better man than when he left, and it looks as if he would do a good amount of work yet. He has not been in such excellent health for many years."

THE increasing use of scientific terms in popular literature may be a good sign, but such terms have now and then to do unwonted duty. Witness a passage from a new tale entitled "Little Hodge," by the author of "Ginx's Baby." It is out of a pathetic description of a very small new-born child being weighed in the workhouse. "'Poor little creetur!' said the nurse, taking up the morsel of humanity from its uncomfortable position in the workhouse scales, which had been brought up from the kitchen expressly to test its *specific gravity.*" We hasten to add that we infer from this a slight confusion in the author's mind, not an accusation against our workhouse officials of weighing new-born babies under water for experimental purposes.

We understand that the Fellows of the Chemical Society have started a Chemical Club, one of the objects of which is to promote the contribution and discussion of original papers to the society, and to encourage good fellowship amongst its members. The number of members is limited to fifty, and we hear that there are only a few vacancies remaining. The meetings of the club take place once a month, when the members dine together before adjourning to the evening meeting of the Chemical Society.

We are glad to notice the formation of a society at New Cross, entitled "The New Cross Microscopical and Natural History Society," which meets at the Commercial Rooms, Lewisham High Road. The society has, we believe, made a good start, and will be glad to receive additions to its membership, and we hope that all who join it will remember that the best way to ensure success for such a society is by every member striving to take a share in the work. By means of exhibitions, the formation of natural history cabinets, microscopical work, excursions, lectures and papers, the society seeks to carry out its objects. The subscription is small, only ten shillings a year. Further information may be obtained from the hon. sec., Mr. Martin Burgess.

The sixth annual Soiree of the Old Change Microscopical Society will be held at the City Terminus Hotel, Cannon Street, on Friday evening, February 28.

The *Challenger* arrived at Gibraltar on Saturday, and is expected to leave to-day for Madeira.

Mr. Prescott Hewett has been elected President of the Clinical Society of London, in succession to Sir William Gull.

Sir John C. Burrows, F.R.C.S., Mayor of Brighton, who gave such a splendid reception to the British Association last year, has just received the honour of knighthood.

Lord Neaves is to be formally installed as Lord-Rector of the University of St. Andrews, on February 13. We understand Lord Neaves is to offer four prizes annually during his term of office, to be competed for by students attending the University.

We announced last week that Mr. W. Saville Kent has been appointed resident naturalist and curator of the Brighton Aquarium, in room of the late Mr. J. K. Lord. We believe Mr. Kent is to have the assistance, as consulting naturalists, of Messrs. Henry Lee and Frank Buckland, while Mr. Reeves Smith, late of the Spa at Scarborough, has been engaged as general manager and secretary. Under Mr. Lee's advice and superintendence important changes and improvements are already being effected. Fishes of incongruous species, which have lately had joint possession of some of the tanks, are being separated and placed in those best suited to their habits; whereas only six tanks have hitherto been set apart for the exhibition of fresh water fishes, eight additional ones have now been prepared for them, which can be reconverted into receptacles for marine specimens in a few hours in case of need. Tanks for the storage of a reserve of specimens apart from public view are in course of construction, and arrangements are being made for careful observation of the marine invertebrata and other forms of aquatic life. It has also been proposed that a series of microscopes shall be provided, by means of which interesting living and mounted objects, illustrative of the minute organisms developed in the tanks shall be exhibited to the public. This indicates a serious intention to utilise the great resources of the Brighton Aquarium, as they should be utilised for the purposes of experimental and practical zoology, by affording opportunity for careful researches and investigations which may prove of scientific interest and economic value.

We have received a copy of the *Mobile Register* for December 15 last, containing a letter from Mr. A. W. Dillard, in which he endeavours to account for the generally acknowledged increase in the severity of the winters in Alabama. In all European countries it is commonly believed the climate has become warmer in proportion as the forests have been felled and the land cultivated. In Alabama, however, similar operations have apperently produced opposite results. The writer, however, believes that the general dryness of Africa, and especially of the Great Desert, has no inconsiderable effect on the climate of Europe, and accounts for the great difference of temperature between the same latitudes in Europe and America. He accounts for the change of climate in Alabama and other southern American states in the following way:—"The felling of our Southern forests gives a more unrestricted scope to the north-western winds, chilled by the snow on the Rocky Mountains and the ice of the northern lakes and rivers. These bleak winds are not counteracted by warm gales, blowing from a dry country, such as Africa; consequently they exert all their chilling influence on our climate. The gales which we have from the south are impregnated with a good degree of moisture, and so add to the cold consequent upon the blowing of the wind from the north."

A despatch from Dr. Kirk, dated Zanzibar, Nov. 5, 1872, has been received at the Foreign Office. It announces that the men sent to help Dr. Livingstone had reached him, and that he had started for the interior about August 18.

In Nature, vol. vii. p. 7, we intimated that among other expeditions to the Arctic Regions was one under the command of a rich and adventurous young Frenchman, M. Pavy, that had set out from San Francisco to go by way of Wrangell Land, to the north of the eastern part of Siberia. If we can trust a report in the *Times* for January 17 from the *Courier des Etats Unis*, his hopes have been gloriously realised, for he has discovered an Arctic Continent. The account professes to be a summary of despatches, dated Wrangell Land, lat. 74·38, W. long. 176·18, August 23, 1872, committed to the care of the captain of a whaler, for the French Geographical Society, which, it is said, will publish the scientific results after having examined them. A similar account appeared some time since in the *Scotsman*. The following are the chief points of the somewhat remarkable story:—On July 17 Pavy and his party reached the mouth of the river Petrolitz. From this point they met with immense fields of ice moving towards the north-east. The observations indicated a deviation of 18 miles, caused by the movements of the ice, a fact tending to confirm the theory of M. Pavy respecting the concentration and the augmentation in rapidity of the branch of the great Japanese current, called Ku-Ro-Sirod, which passes through Behring Strait, and flows toward the east away from the coast of Siberia. The exploring party reached the coast of Wrangell Land, at the mouth of a great river coming from the north-west, which is not laid down on any map. This discovery confirms M. Pavy's theory that there exists a vast polar continent which stretches far to the north, the temperature of which is warm enough to melt snow in summer. The current of this unnamed river turns to the east, and follows the coast with a velocity of six knots an hour. M. Pavy and his companions followed the current of the river towards the north, a distance of 230 miles. Its bed is uniformly horizontal, and it is bordered by mountains of great height, with several perpendicular peaks. At 80 miles from the mouth the explorers found on the plain some vestiges of mastodons, and on clearing away the snow from a spot whence emerged the tusks of one of that extinct race, they brought to light its enormous body, in a perfect state of preservation. The skin was covered with black stiff hair very long and thick upon the back. The tusks measured 11 ft. 8 in. in length, and were bent back about the level of the eyes. From its stomach were taken pieces of bark and grasses, the nature of which could not be analysed on the spot. Over an area of many miles the plain was covered with the remains of mastodons. This region abounds with polar bears, which live on the remains of the mastodons. At 120 miles from the coast and half a league from the river, rises a vast block of ice 1,000 ft. high, the base of which is surrounded by gravel and polished rounded stones deeply sunk in the soil. The Arctic animals are very numerous in this valley, and myriads of birds fly above the river and over both of its banks. At the date of his despatches M. Pavy was preparing to winter in the 75th degree of latitude in the valley of the great river of the supposed polar continent. He considered himself certain to arrive in the beginning of next season at a polar sea of moderate temperature at the northern extremity of the continent. The explorers calculate on afterwards reaching the Atlantic through Melville Strait.

THE two principal articles in the last number of the *Bulletin de la Société de Géographie* are, one by M. Jules Gerard, on the present state of knowledge of New Guinea, in which he gives a historical account of discovery in that island, and a description of its geography, ethnography, natural history, meteorology, its colonisation and commercial relations. This is accompanied by a good map. The other is an account of the river Amazon, and the region through which it flows, by the Abbé Durand, compiled from various geographical memoirs. The same number contains a letter from the Abbé Desgodins, pointing out, apparently from personal knowledge of the region concerned, a number of errors in Mr. T. T. Cooper's "Travels of a Pioneer of Commerce."

WE have received the programme of "The Leeds Naturalists' Field Club and Scientific Association," for the next three months. It meets every Tuesday evening, alternate meetings being devoted to the reading of papers and to the exhibition of specimens, with general discussion on scientific subjects. During the first three months of 1873 the following papers will be read:—Rev. John Hanson on "The Development or Transformation of Insects." Mr. James Abbott, vice-president, on "The Anatomy of the Slug." Mr. Geo. Ward, F.C.S., "Observations upon the Element Carbon." Mr. Edwin Birchall, on "The Origin and Distribution of the Insects of the British Islands." Mr. Wm. Todd, vice-president, on "The Silurian Rocks and Fossils." The annual meeting will be held on March 25.

THE last number of *Memorie della Società degli Spettroscopisti Italiani*, contains drawings of the chromosphere as observed at Rome, Naples, and Padua during January, February, and March 1872.

THE first number of *Iron*, the name of the new series of the *Mechanic's Magazine*, is printed on a very much larger size of paper than its predecessor, and contains a number of useful articles, mostly on the practical applications of scientific principles. We wish *Iron* a long and successful career.

THE principal paper in the *Revue Scientifique* for January 18, is a continuation of the article on "The Observatories of Great Britain," in which details are given concerning the Observatories at Edinburgh, Dublin, the Cape of Good Hope, Madras, Melbourne, Paramatta (New South Wales), Sydney, and Lucknow.

WE learn from the *Medical Record* that a new faculty of medicine is about to be instituted at Geneva.

THE STAR SHOWER AS SEEN AT MAURITIUS

A GREAT shower of meteors was observed in this colony on the night of November 27 last. I had not myself the good fortune to see it, but it was seen by several other persons who have obligingly communicated their observations.

At the Observatory it is customary to watch, as far as possible, for meteors during the whole of November, but, on the night in question, the sky was nearly overcast. At 9.15 P.M. we had a shower of rain, and at 9.30, when the last observation of the instruments and of the weather was taken for the night, nine-tenths of the sky were overcast, and the weather was gloomy. Looking out about midnight from a window facing the north I observed that the visible parts of the heavens was still overcast, but remarked that the clouds were unusually luminous, as if the moon in her first or last quarter were shining behind them. This struck me particularly, and I waited some minutes in expectation of seeing a break in the clouds.

On the following day, I received a telegram from the Hon. Edward Newton, Colonial Secretary, announcing that he and Mr. C. Bruce, Rector of the Royal College, had counted from their residence, twelve miles off, and nearly 900 feet above the sea-level, 2,678 meteors between 9.30 P.M. and 12.55 A.M.; and soon afterwards I ascertained that some other members of our Meteorological Society, as well as several other gentlemen, had also observed the shower, all from the same part of the Island.

In place of attempting to summarise the accounts which have reached me, I think it preferable to give them in full, in the order in which they were received.

(1.) *Observations by the Hon. Mr. Newton and Mr. Bruce.*—"About 9.30 on the evening of November 27 we observed an unusual frequency of shooting stars. At 9.35 we began to keep regular count. We continued our observations till 12.55, at which time the frequency had greatly diminished, as will be seen from the following statement of the numbers seen in the intervals of time noted—

From 9.35 to 10.35	786
,, 10.35 ,, 11.35	1,160
,, 11.35 ,, 12.10	454
,, 12.10 ,, 12.35	193
,, 12.35 ,, 12.55	85
Total	2,678

"The approximate time of greatest intensity of the shower was from 11 to 11.30. About this time two meteors of extraordinary brilliancy were particularly noted: the first at 11.22, and the second at 11.44.

"The former of these started from the three stars in the tail of Aries, and the luminous orb vanished somewhat south of the Ecliptic. The train of this meteor was distinctly visible for 4 minutes. At the vanishing moment of the luminous point, it slowly wheeled from horizontal to vertical, and was seen for nearly two minutes vertical to the horizon.

"The latter, starting from a point at right angles to the three stars in the tail of Aries and the Pleiades, passed through the Pleiades, Taurus, and Orion, and vanished near Sirius. Its train was visible for more than a minute.

"Nearly all the meteors observed radiated from a point near Aries, nearly at right angles with the Pleiades, and shot either in the direction of the bright meteor of 11.44, or in a line through Aries, cutting the ecliptic and vanishing to the S.

"From eighty to ninety per cent. of the meteors were followed by a soft, broad train of light, visible for a few seconds after the vanishing of the luminous point, of diameter at least equal to the luminous orb, and extending from 10° to 20°. In the case of the two bright meteors above mentioned, the train of light extended over at least 40°.

"During our observations, portions of the heavens were from time to time obscured by dark fleeting clouds, which at times obscured the starting and vanishing points.

"Between 10 and 11 we observed occasionally a pulsating coruscation, similar to the appearance of the Aurora Australis. Mr. Meldrum, however, informs us that the instruments at the observatory gave no indication of a magnetic disturbance.

"In colour the majority of the meteors seemed to be equal in purity to that of the most colourless stars.